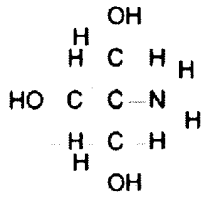
FEATURED PRODUCTS

[Bis-Tris] [Buffer Solutions]
[CAPSO, DIPSO, HEPPSO, etc..]
[HEPES] [MES] [MOPS] [PIPES]

TRIS



Tris-(hydroxymethyl)aminomethane
pKa = 7.77 at 37C
Salt Forms: free base, hydrochloride salt, hemihydrochloride salt, and other salt forms
Buffer Range: 7.30 to 7.80
Working Range: 20 to 200 mM

Tris is the buffer of choice for several in vitro diagnostic assay reagents. These are urea, cholesterol, triglycerides, and other reagents for determination of serum analytes. Tris buffer is the preferred phosphate buffer system for diagnostic reagents due to low metal content, protection against preservation of enzyme activity under frozen state during lyophilization and better control of pH above pH 7.5. Some coenzymes (NADH, NADPH) are more stable in Tris buffer system at pH above 7.5 than in phosphate buffers. Additionally, Tris provides a low absorbance blank of these diagnostic reagents.

A buffer system based on Tris, ammonium and potassium ion (TNK) is used to facilitate PCR reactions in large numbers with uniform conditions of experiments (1). The use of this buffer system permits screening of a 60,000-clone yeast artificial chromosome library with more than 200 primer pairs. Over time, the TNK buffer system has proven effective. It provides a way to utilize a single temperature for PCR, and thus permits the rapid optimization of assay conditions for primer pairs in an environment where thermocycler use is limited or where a high-throughput thermocycler is in use.

A novel multiphasic buffer system for discontinuous SDS-polyacrylamide gel electrophoresis of proteins and peptides has been developed by Wiltfang (2). The buffer system uses Bicine and sulfate as the trailing and leading ion components, respectively, and **Bis-Tris** and Tris as the counter ions in the

stacking and separating phase, respectively. Proteins and peptides with molecular masses 100,000 to 1,000 are detected after colloidal Coomassie and colloidal gold staining, respectively.

Bottu studied the effect of Tris buffer and chelators on the chemiluminescence of luminol with Fenton's reagent near neutral pH (3)

A study by McCoy-Messer and Bateman of the commonly used ABTS-horseradish peroxidase substrate system indicated that the oxidized dye product was destabilized in the presence of &quotGood" buffers. It was therefore recommended to use either Tris or phosphate buffer systems near neutral pH for the reaction system in biological applications (4).

References:

1. Blanchard, M.M., TaillonMiller, P., Nowotny, P. and Nowotny, V., PCR Methods Appl., 2 (3), 234 (1993).

2. Wiltfang, J., Arnold, N. and Neuhoff, V., Electrophoresis, 12 (5), 352 (1991).

3. Bottu, G., J. Biolumin. Chemilumin., 6 (3), 147 (1991).

4. McCoy-Messer, J.M. and Nateman, Jr., R.C., Biotechniques, 15 (2), 270 (1993)

▲ TOP OF PAGE